

CLAIMS

What is claimed is:

1. A laminated channel, comprising:
 - (a) an inner metal layer having opposite surfaces and a pair of opposite longitudinal edges;
 - (b) outer plastic layers adjacent each said opposite surfaces of said inner metal layer, said plastic layers each having a pair of longitudinal edges disposed adjacent said longitudinal edges of said inner metal layer and wherein, at each longitudinal edge of said inner metal layer, said plastic layers longitudinal edges are joined to one another with a plastic edge portion; and,
 - (c) said inner metal layer and outer plastic layers being bent together between said metal longitudinal edges for thereby forming said laminated channel, and wherein said plastic edge portion between said plastic layers longitudinal edges maintain said outer plastic layers adjacent said metal layer during and after said bending.
2. The laminated channel of claim 1 wherein said longitudinal edges of said inner metal layer and said plastic edge portions have a common mating non-linear configuration.
3. The laminated channel of claim 1 wherein said longitudinal edges of said inner metal layer and said plastic edge portions have a common mating sinusoidal shape.
4. The laminated channel of claim 1 wherein said longitudinal edges of said inner metal layer and said plastic edge portions have a common mating square wave shape.
5. The laminated channel of claim 1 wherein said longitudinal edges of said inner metal layer and said plastic edge portions have a common mating triangular wave

shape.

6. The laminated channel of claim 1 wherein said inner metal layer is comprised of stainless steel.

7. The laminated channel of claim 1 wherein said outer plastic layers and said plastic edge portions are comprised of ultra-high molecular weight polyethylene.

8. The laminated channel of claim 1 wherein said laminated channel is bent so as to have a U-shape in cross section.

9. The laminated channel of claim 1 wherein said laminated channel is bent so as to have a tubular shape in cross section.

10. The laminated channel of claim 1 wherein said laminated channel is bent so as to have a V-shape in cross section.

11. The laminated channel of claim 1 wherein said laminated channel is bent so as to have a semicircular shape in cross section.

12. The laminated channel of claim 1, further comprising:

(a) at least one hole extending through said metal layer between said opposite surfaces;

(b) said outer plastic layers joined to one another with a plastic portion extending through said hole in said inner metal layer such that said outer plastic layers are retained adjacent said inner metal layer; and,

(c) wherein said plastic portion extending through said hole maintains said outer plastic layer adjacent said metal layer during and after said bending.

13. The laminated channel of claim 12, wherein a plurality of holes are provided through said metal layer between said opposite surfaces, said holes substantially aligned in a row generally parallel to said longitudinal edges, and wherein said outer plastic layers are joined to one another with plastic portions extending through said plurality of holes.

14. The laminated channel of claim 13, wherein said inner metal layer further includes a pair of opposite end edges extending generally transverse to said longitudinal edges, said plastic layers each further having a pair of end edges disposed adjacent said end edges of said inner metal layer and wherein, at each end edge of said inner metal layer, said plastic layers end edges are joined to one another with a plastic edge portion.

15. The laminated channel of Claim 14 wherein said end edges of said inner metal layer are enclosed by said outer plastic layers and said plastic edge portion.

16. The laminated channel of claim 14, wherein generally adjacent each said opposite end edges of said metal layer a plurality of holes are provided through said metal layer between said opposite surfaces and wherein said outer plastic layers are joined to one another with plastic portions extending through said plurality of holes adjacent said opposite end edges of said metal layer.

17. The laminated channel of claim 16, wherein a pair of channels are aligned and joined to one another end to end along their respective end edges thereby forming a longer channel.

18. The laminated channel of claim 16, wherein a pair of channels are aligned side by side and joined to one another longitudinal edge to longitudinal edge thereby forming a channel having a tubular shape in cross section.

19. The laminated channel of claim 16 wherein said longitudinal edges of said inner metal layer and said plastic edge portions have a common mating non-linear configuration.

20. The laminated channel of claim 19 wherein said outer plastic layers and said plastic edge portions are comprised of ultra-high molecular weight polyethylene.

21. The laminated channel of claim 16 wherein said outer plastic layers and said plastic edge portions are comprised of ultra-high molecular weight polyethylene.

22. The laminated channel of claim 1, wherein said inner metal layer further includes a pair of opposite end edges extending generally transverse to said longitudinal edges, said plastic layers each further having a pair of end edges disposed adjacent said end edges of said inner metal layer and wherein, at each end edge of said inner metal layer, said plastic layers end edges are joined to one another with a plastic edge portion.

23. The laminated channel of Claim 22 wherein said end edges of said inner metal layer are enclosed by said outer plastic layers and said plastic edge portion and said longitudinal edges of said inner metal layer are enclosed by said outer plastic layers and said plastic edge portion.

24. The laminated channel of claim 22, wherein generally adjacent each said opposite end edges of said metal layer a plurality of holes are provided through said metal layer between said opposite surfaces and wherein said outer plastic layers are joined to one another with plastic portions extending through said plurality of holes adjacent said opposite end edges of said metal layer.

25. The laminated channel of Claim 24 wherein said end edges of said inner metal layer are enclosed by said outer plastic layers and said plastic edge portion and said

longitudinal edges of said inner metal layer are enclosed by said outer plastic layers and said plastic edge portion.

26. The laminated channel of Claim 1 wherein whereby said longitudinal edges of said inner metal layer are enclosed by said outer plastic layers and said plastic edge portion.

27. A laminated channel, comprising:

- (a) an inner metal layer having opposite surfaces, and at least one hole extending through said metal layer between said opposite surfaces;
- (b) outer plastic layers adjacent each said opposite surfaces of said inner metal layer, said outer plastic layers joined to one another with a plastic portion extending through said hole in said inner metal layer such that said outer plastic layers are retained adjacent said inner metal layer; and,
- (c) said inner metal layer and outer plastic layers being bent together for thereby forming said laminated channel and wherein said plastic portion extending through said hole maintains said outer plastic layer adjacent said metal layer during and after said bending.

28. The laminated channel of claim 27, wherein said metal layer includes longitudinal edges and a plurality of holes are provided through said metal layer between said opposite surfaces, said holes substantially aligned in a row generally parallel to said longitudinal edges, and wherein said outer plastic layers are joined to one another with plastic portions extending through said plurality of holes.

29. The laminated channel of claim 28, wherein generally adjacent each said opposite end edges of said metal layer a plurality of holes are provided through said metal layer between said opposite surfaces and wherein said outer plastic layers are joined to one another with plastic portions extending through said plurality of holes adjacent

said opposite end edges of said metal layer.

30. The laminated channel of claim 29 wherein said outer plastic layers and said plastic edge portions are comprised of ultra-high molecular weight polyethylene.

31. A laminated channel, comprising:

(a) an inner metal layer having a pair of opposite surfaces, a pair of opposite longitudinal edges, a pair of opposite end edges extending in a generally transverse relationship to said longitudinal edges, and a predetermined pattern of holes located in said inner metal layer in at least one row in which said holes are spaced apart from one another in said row and from said longitudinal edges and extend in a generally transverse relationship to said opposite end edges;

(b) outer plastic layers having a pair of longitudinal edges disposed adjacent said longitudinal edges of said inner metal layer and a pair of end edges disposed adjacent said end edges of said inner metal layer, said outer plastic layers being disposed in movably slidable relationship relative to and on said opposite surfaces of said inner metal layer, said outer plastic layers having portions extending through said holes of said row thereof in said inner metal layer such that said portions interconnect said outer plastic layers to one another and pin said outer plastic layers to said inner metal layer at said locations of said holes so that said outer plastic layers are immovable relative to said inner metal layer along said row of holes; and,

(c) said inner metal layer and outer plastic layers being bent together along at least one longitudinal axis extending between said opposite ends of said inner metal layer and outer plastic layers and spaced from and generally parallel to said row of holes and said longitudinal edges of said inner metal layer and outer plastic layers so as to provide said laminated channel with a preselected cross-sectional shape.

32. A method of fabricating a laminated channel, comprising the steps of:

(a) providing a metal layer having a pair of opposite surfaces, a pair of

opposite longitudinal edges, and a pair of opposite end edges extending in a generally transverse relationship to said longitudinal edges;

(b) forming a predetermined pattern of holes in said metal layer in at least one row thereof in which said holes are spaced apart from one another in said row and from said longitudinal edges and said at least one row of holes extend in a generally transverse relationship to said opposite end edges;

(c) providing a plastic material on said opposite surfaces of said metal layer;

(d) forming said plastic material into plastic layers on said opposite surfaces of said metal layer such that said plastic layers are disposed in movably slidable relationship along said opposite surfaces of said metal layer and have a pair of longitudinal edges disposed adjacent said longitudinal edges of said metal layer and a pair of end edges disposed adjacent said end edges of said metal layer but also such that portions of said plastic layers extend through said holes of said row thereof in said metal layer so as to interconnect said plastic layers to one another and pin said plastic layers to said metal layer at the locations of said holes so that said plastic layers are immovable relative to said metal layer along said row of holes; and

(e) forming said channel by bending said metal and plastic layers together along at least one longitudinal axis extending between said opposite ends of said metal and plastic layers and spaced from and generally parallel to said row of holes and said longitudinal edges of said metal and plastic layers.

33. The method of claim 32 further comprising the step of forming said longitudinal edges of said metal and plastic layers with a common non-linear configuration.

34. The method of claim 32 wherein said providing said metal layer includes providing a stainless steel metal layer.

35. The method of claim 32 wherein said providing said plastic layers includes

providing ultra-high molecular weight polyethylene plastic layers.

36. The method of claim 32 further comprising the step of providing said metal layer with at least another row of holes extending generally parallel to and spaced from one of said end edges thereof which enables end portions of said plastic layers to interconnect one another and pin with said metal layer through said another row of holes so as to prevent separation of said layers adjacent said end edges of said layers.

37. The method of Claim 32 further comprising the step of forming plastic material longitudinal edge portions interconnecting said plastic layers longitudinal edges.

38. The method of Claim 37 further comprising the step of forming plastic material end edge portions interconnecting said plastic layers end edges.